

REMARKS

In the Office Action, the Examiner rejected claims 1-29 under 35 USC §103(a). This rejection is fully traversed below.

Claims 1, 9, 18, 21, 22 and 28 have been amended to further clarify the subject matter regarded as the invention. Claims 1-29 remain pending in the application. Reconsideration of the application is respectfully requested based on the following remarks.

REJECTION OF CLAIMS 1-29 UNDER 35 USC §103(a)

In the Office Action, the Examiner rejected claims 1-29 under 35 USC §103(a) as being anticipated by Brotman et al. (U.S. Patent No. 5,917,889). This rejection is fully traversed below.

The invention relates to an improved approach for resolving overloaded keys (i.e., ambiguous keys) in constrained computing devices. The invention utilizes a combination of ambiguous key entry and a corresponding voice input to particularly identify an entered key. The invention being claimed is distinguished from Brotman et al. below.

Claim 1 pertains to a method for inputting data **in a character-by-character manner** to a mobile communication device. The mobile communication device has a constrained keyboard with ambiguous keys and a microphone for picking up voice input. Among other things, claim 1 recites:

- (a) receiving voice input from a user using the microphone, **the voice input pertaining to a single character;**
- (b) detecting, **substantially concurrently with said receiving (a),** that one of the ambiguous keys of the keyboard has been selected by the user as a selected key;

Claim 1, lines 5-6.

In contrast, Brotman et al. pertains to a technique to capture a string of intended alphabetic or alphanumeric characters using indications of telephone keys. Accordingly, Brotman et al. is concerned with capturing a string of characters, whereas claim 1 is specifically limited to a method for inputting data in a character-by-character manner. In addition, the voice input being received from a user as recited in claim 1 pertains to but a single character. On the other hand, in Brotman et al., the user's voice

input pertains to the string as the user spells out the complete string that has previously been entered.

Furthermore, Brotman et al. fails to teach or suggest the detection of one of the ambiguous keys of the keyboard that is selected by the user **substantially concurrently** with the receiving of a voice input from the user. First, it should be noted that Brotman et al. pertains to an automated call processing environment that makes use of a telephone keypad which has ambiguous keys. However, as explained in Brotman et al., the caller enters a series of telephone keys corresponding to the alphabetic characters of a string to be captured, and then the caller utters each character of the string. (See Brotman et al., col. 3, lines 41-57, and see Fig. 2). Thereafter, a string of selected alphabetic characters is formed and presented to the caller, who can then signal whether the generated character string is correct or incorrect. It is clear from Fig. 2 of Brotman et al. that the system at step 640 prompts the user to utter the string of characters that have been depressed using telephone keys.

Hence, given that the system described in Brotman et al. receives the user voice input only **after** the user has been prompted to provide such, causes Brotman et al. to teach away from the invention recited in claim 1. Specifically, claim 1 clearly recites that the detection of the selection of one of the ambiguous keys is performed **substantially concurrently** with the receiving of the voice input from the user. Hence, in no way can Brotman et al. teach or suggest such limitations of claim 1.

Indeed, Brotman et al. states at col. 4, lines 4-10 that the particular advantages of its method are the processing of an entire string of characters together. Specifically, at col. 4, lines 4-10, Brotman et al. states:

An advantage of this method is that the entire character string is processed together, so information in the string (i.e., its grammar) is available for use in disambiguation.

Another advantage of this method is that it seems faster to the caller than character-by-character capture, since some of the interaction overhead is amortized over the entire string, rather than being incurred for each character.

Accordingly, Brotman et al. fails to teach or suggest that each character would be processed separately, such that as an ambiguous key is selected (entered) by the user, a voice input provided by the user and pertaining to a single character would be substantially concurrently received, whereby processing is performed in a character-by-

character basis. Therefore, it is submitted that claim 1 is patentably distinct from Brotman et al.

Claim 9 pertains to a computer readable medium having program code for disambiguating a key selection to a constrained input keyboard of a computing device. Among other things, claim 9 recites:

program code for receiving a voice input corresponding to a single one of the characters associated with the selected key, the voice input being received substantially concurrently with the detection of the selected key;

Claim 9, lines 7-9.

For similar reasons as noted above with respect to claim 1, it is submitted that claim 9 is also patentably distinct from Brotman et al. given that Brotman et al. not only fails to teach or suggest receiving a voice input substantially concurrently with the detection of a selected key, but also teaches away from such character-by-character processing. Therefore, it is submitted that claim 9 is patentably distinct from Brotman et al.

Claim 17 pertains to a key disambiguate system for an ambiguous key input device. The improvement recited in claim 17 involves “completely disambiguating a user’s key input of a single action on a single one of the keys through use of a user’s sound input pertaining to the intended character associated with the single one of the keys.” Claim 17, lines 3-5. Here, the key disambiguate system again is processing single keys together with a user’s sound input pertaining to the single one of the keys. Hence, for similar reasons to those noted above, it is submitted that Brotman et al. fails to teach or suggest the features of claim 17.

Claim 19 pertains to a key disambiguation system that, among other things, recites a key determination unit that “operates in response to the key selection event to determine the one of the characters being input based on the comparison data.” Hence, the key determination unit determines the one of the characters being input. The key selection event is triggered by the user’s selection of one of the keys of an ambiguous key input device, and the comparison data is produced by comparing a processed voice input with selected ones of reference source patterns in a pattern comparison unit. Hence, the key determination unit operates to identify the character being input on a character-by-character basis. Accordingly, for similar reasons to those noted above, it is submitted that claim 19 is patentably distinct from Brotman et al.

In addition, it is submitted that the Examiner's rejection of claim 19 does not rise to a *prima facie* rejection. In other words, the Examiner's brief mention of claim 19 on page 4 of the Office Action is inadequate to provide a *prima facie* rejection of claim 19 under 35 USC §103(a) for failure to consider each of the limitations recited in claim 19. Accordingly, it is believed that the rejection of claim 19 is defective for this reason as well as the patentable distinction noted above.

Claim 21 pertains to a mobile communication device having a constrained keyboard with ambiguous keys. Among other things, claim 21 recites "means for detecting, substantially concurrently with the receipt of the voice input via said microphone, one of the ambiguous keys of the keyboard that has been selected by the user as a selected key" (claim 21, lines 4-6). The voice input pertains to a single character. The functional operation recited in this element is similar to that discussed above with respect to claim 1. Hence, it is submitted that claim 21 is patentably distinct from Brotman et al. for at least similar reasons to those noted above with respect to claim 1.

In addition, it should be noted that several of the claim elements recited in claim 1 are means plus function elements in accordance with 35 USC §112, paragraph 6. As such, a proper rejection must consider the corresponding structure for these means provided within the patent application. Applicant believes that the failure of the Examiner to perform this analysis causes the rejection to fail to rise to the level of a *prima facie* rejection.

Claim 22 pertains to a method for inputting data to a mobile communication device having a constrained keyboard with ambiguous keys and a microphone for picking up voice input. Claim 22, among other things, recites "receiving user inputs, the user inputs including a voice input from a user using the microphone and a key selection of a single one of the ambiguous keys of the keyboard, the voice input pertaining to a single character corresponding to the key selection, and the voice input and the key selection being received substantially simultaneously." Claim 22, lines 4-8. As previously noted, Brotman et al. fails to teach or suggest the simultaneous receipt and/or processing of a voice input and a particular key selection to identify a single character being input by a user. In fact, Brotman et al. teaches against such processing. Accordingly, it is submitted that claim 22 is patentably distinct from Brotman et al.

Based on the foregoing, it is submitted that claims 1, 9, 17, 19, 21 and 22 are patentably distinct from Brotman et al. In addition, it is submitted that dependent claims 2-8, 10-16, 18, 20 and 23-29 are also patentably distinct from Brotman et al. for at least the same reasons. The additional limitations recited in the independent claims or the dependent claims are not further discussed as the above-discussed limitations are clearly sufficient to distinguish the claimed invention from Brotman et al.

Consider, for example, claim 28 which recites "wherein said receiving (a) of the voice input is provided by the user without prompting the user to provide a voice input." Brotman et al. clearly provides that the user utterance for the string of characters that have been previously input is **not received until after the system prompts the user** for the same. See Brotman et al., Fig. 2 at step 640. Hence, Brotman et al. clearly teaches away from receiving the voice input without prompting the user. Claim 29 recites a similar limitation. Thus, it is submitted that claims 28 and 29 are further patentably distinct from Brotman et al. for at least this additional reason. On page 4 of the Office Action, the Examiner suggests that, although not taught by Brotman et al., it would have been obvious for those skilled in the art "to discard the prompt, in Brotman teaching, for the purpose of speeding up the process." There is, however, nothing in Brotman et al. that would hint, motivate or suggest to those of ordinary skill in the art, that the prompting of the user for the utterance of a string of previously input characters could be eliminated. As discussed above, the teaching in Brotman et al. actually teaches against the elimination of the prompt because the stated advantages of the Brotman et al. method are to process the entire character string together and that doing so would be faster than a character-by-character approach.

Thus, it is respectfully requested that the Examiner withdraw the rejection of claims 1-29 under 35 USC §103(a).

SUMMARY

It is submitted that claims 1-29 are patentably distinct from Brotman et al. Reconsideration of the application and an early notice of allowance are earnestly solicited.

If there are any issues remaining which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner

is respectfully requested to contact the undersigned attorney at the telephone number listed below.

Applicant hereby petitions for an extension of time which may be required to maintain the pendency of this case, and any required fee for such extension or any further fee required in connection with the filing of this Amendment is to be charged to Deposit Account No. 500388 (Order No. UWP1P029).

Respectfully submitted,

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